



Submarine Base, Groton, Conn.

MEMORANDUM REPORT NO. 68-11

LIMITATIONS ON THE USE OF CIRCUMAURAL EARPHONES

by

Benson, R. W., Charan, K. K., Day, J. W., Harris, J. D.,
Niemoeller, A. F., Rudmose, W., Shaw, E. A. G., and Weissler, P.

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Approved and Released by:

Gerald J. Duffner, CAPT, MC, USN
COMMANDING OFFICER
Naval Submarine Medical Center

29 May 1968



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U.S. NAVAL SUBMARINE MEDICAL CENTER
NAVAL SUBMARINE BASE NEW LONDON
GROTON, CONNECTICUT 06340

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Investigators:

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Niemoeller, A. F., Rudmose, W., Shaw, E.A.G., and Weissler, P.

Submitted by:

J. Donald Harris
J. Donald Harris, Ph.D.
Head, Auditory Research Branch

Reviewed and Approved by:

Charles F. Gell
Charles F. Gell, M.D., D.Sc.
Scientific Director

Approved and Released by:

Gerald J. Duffner
Gerald J. Duffner
Captain, MC USN
Commanding Officer

basis for this calibration. For this reason, the committee urges research on circumaural earphones, particularly on their construction, use, and calibration.

To summarize, it is the author's opinion that there are not sufficient data available at the present time to enable one to use circumaural earphones whenever sound-pressure levels of pure tones at the eardrum must be accurately defined, without thoroughly investigating *first* the calibration of the system consisting of the particular earphones and ears (both real and artificial) under consideration and *second* the reliability of this calibration. At this time the routine use of circumaural earphones in clinical and industrial audiometry cannot be justified, but should be restricted to laboratory practices where investigation of calibration procedures in relation to the specific earphones can be carried out.

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13. ABSTRACT			
<p>A literature survey and interpretation by a panel of experts of the NAS-NRC Committee on Hearing, Bioacoustics and Biomechanics shows that the now commonly-used large earmuffs, designed to protect hearing, cannot indiscriminately replace the small earphone cushion currently the standard for audiometry. If they are so used, hearing losses at 3000-8000 cycles/second should be rechecked with the standard cushion.</p>			

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